

ABSTRACT OF THE DISCLOSURE

A device for penetrating tissue and removing a biological sample includes a biological sampling element to remove a biological sample. The biological sampling element includes a passage therethrough. The device further includes a penetrator positioned within the passage. The penetrator is energized in a repetitive manner to assist in penetrating tissue. The biological sample
5 element can be adapted to remove a tissue sample or a biological fluid sample (for example, blood).

A device for penetrating tissue and positioning a tissue resident conduit (for example, a catheter), includes a tissue resident conduit (for example, a catheter) including a passage therethrough; and a penetrator in operative connection with the catheter. A device for inserting a tissue resident conduit includes at least one component that is energized during penetration to assist in penetrating tissue.

10 In one embodiment, the tissue resident conduit is flexible and the energized component is positioned at a forward end of the tissue resident conduit. The device can further include a mechanism for directing the penetration of the tissue resident conduit. A needle for penetrating tissue includes a first effector including a surface and at least one actuator in operative connection with the first effector,. The actuator is adapted to cause motion of the first effector such that tearing
15 of tissue takes place in regions where there is close proximity of tissue to the surface of the first effector.